New species of the genera *Sphallomorpha* Westwood, 1837 and *Adelotopus* Hope, 1834 from Queensland, Australia (Insecta: Coleoptera: Carabidae: Pseudomorphini)*

* 15th supplement to the "Revision of the Pseudomorphinae of the Australian Region".

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ABSTRACT

Three new pseudomorphine carabid species of the genera *Sphallomorpha* Westwood, 1837 and *Adelotopus* Hope, 1834 are described from Queensland, Australia: *Sphallomorpha cognata* and *A. leviusculus* from south-eastern Queensland, and *Adelotopus moffatti* from central Queensland. The new species are compared with their nearest relatives and introduced in the keys to the respective genera. ❒ *Coleoptera, Carabidae, Pseudomorphini, Sphallomorpha, Adelotopus, new species, Australia*

Within a sample of recently collected carabid beetles, received from Queensland Museum, Brisbane, I detected, *inter alia*, three new species of the pseudomorphine genera *Sphallomorpha* Westwood, 1837 and *Adelotopus* Hope, 1834, from south-eastern and central Queensland that are described in the present paper.

Pseudomorphini (or -inae, according to the opinion of the respective workers) is a moderately large tribe (or subfamily) of Carabidae of outstanding shape and structure, and has a very specialised biology. The tribe mainly occurs in Australia and North and South America, but a few species of the genera *Sphallomorpha* Westwood, 1837 and *Adelotopus* Hope, 1834 have been recorded from New Guinea, Solomon Islands, Java, and the Moluccas (Baehr 2009a), and one species of the genus *Cryptocephalomorpha* Ritsema, 1875 even occurs in southern Africa, whereas most species of this small genus live in southern and south-eastern Asia (Baehr 2013). According to present knowledge the tribe is most diverse, with respect to body shape and structure, in Australia, where six very differently shaped genera occur (Baehr 1992, 1997, 2002, 2005, 2006, 2008, 2009b, 2014). The American species have not yet been revised, and until recently they were combined in a single genus *Pseudomorpha* Kirby, 1825. Certainly they are far less diverse in their morphology than the Australian Pseudomorphini. Baehr

(1997) erected two subgenera of *Pseudomorpha*, namely *Austropseudomorpha* Baehr, 1997 for the few Australian species, and *Notopseudomorpha* Baehr, 1997 for a few apparently more plesiotypic South American species. However, more recently the genus *Pseudomorpha* has been divided into several genera (Erwin & Geraci 2008), and the subgenera erected by Baehr have been raised to generic rank. When studied more satisfactorily in future, according to Erwin & Geraci (2008), the American species may nearly equal the number of Australian species.

Most pseudomorphine species are more or less depressed, possess depressed legs and a reduced chaetotaxy. Depending on the genera to which they belong, their habitus is very similar to either water beetles of the families Dytiscidae or Hydrophilidae, or wood inhabiting Scolytidae or even Colydiidae. Among the Australian pseudomorphine fauna a gradient is evident from depressed species with prognathous mouth parts, elongate antenna, elongate legs, fairly complete chaetotaxy, and normal shaped female gonocoxites (genus *Sphallomorpha*), to cylindrical body shape, orthognathous mouth parts, short antenna, short, very depressed legs, very much reduced chaetotaxy, and foliaceous female gonocoxites (*Austropseudomorpha* → *Adelotopus* → *Cainogenion* → *Paussotropus*). The species of most genera are ovoviviparous (*i.e.* larviparous) which mode of reproduction is very rare within Carabidae and generally within beetles. The most plesiotypic pseudomorphine genus *Sphallomorpha*, however, is still oviparous.

In Australia the number of species and subspecies is 308 at present, and pseudomorphine beetles occur in all parts of the continent. Almost all species have been found either under the bark of bark shedding trees (mainly eucalypts), or in deep crevices in the bark of other trees, including non-eucalypts, usually in more or less open forest and woodland, but a few species have invaded rain forest, where they may be found on the bark of moss covered trees. The habits of the single species of *Paussotropus* Waterhouse, 1877 and the single Australian species of *Cryptocephalomorpha* Ritsema, 1875 have not yet been recorded, but it is suggested that all pseudomorphine species live in connection with ants, a few even with termites (Baehr 1992, 1997). However, this is actually recorded from only a few species. The larviparous reproduction of most genera likewise may be related to the myrmecophilous habits of the larvae. Similarly, the increasing trend towards development of physogastric larvae in the higher evolved genera is regarded an adaptation to that mode of life.

METHODS

For the taxonomic treatment standard methods were used. The genitalia were removed from specimens relaxed for a night in a jar under moist atmosphere, then cleaned for a short while in hot 10% KOH. The habitus photographs were taken with a digital camera using ProgRes CapturePro 2.6 and AutoMontage and subsequently were worked with Corel Photo Paint X4.

Measurements were taken using a stereo microscope with an ocular micrometer. Body length was measured from apex of labrum to apex of elytra, length of pronotum along midline, length of elytra from the most produced part of the humerus to the most produced part of the apex.

For the chaetotaxy which is very important for the identification of species of *Sphallomorpha*, the abbreviations as used in Baehr (1992) are repeated below.

The holotypes of the new species are stored in Queensland Museum, Brisbane (QM), while a few paratypes are retained in the working collection of the author at Zoologische Staatssammlung, München (CBM). Label data of specimens are given verbatim, including all ciphers and printed labels. Also original spelling of the collecting date is used.

Chaetotaxy

supraorb	supraorbital seta (either side)
preorb	preorbital seta (either side)
clyp	clypeal seta (either side)
labr	labral setae (common)
ment.med	medial mental setae, at base of mental excision or mental tooth (common)
ment.lat	lateral mental setae, on wings of mentum (either side)
gloss	glossal setae, on ventral rim of apex of glossa (either side)
gul	gular setae, inside of gular suture (either side)
postorb	postorbital setae, posteriorly of eye on a conspicuous rim (either side)
suborb	suborbital setae, below eye, laterally of gular suture (either side)
pron.ant	anterior pronotal setae, near anterior angle of pronotum (either side)
pron.post	posterior pronotal setae, near posterior angle of pronotum (either side)
proeps	proepisternal setae, longitudinally and transversally on proepisternum (either side)
marg	marginal setae, along margin of elytra (either side)
st VI	setae on posterior border of sternum VI, the penultimate visible sternite (either side)
♂ st VII	setae of male sternum VII, the terminal visible sternite (either side)
♀ st VII	setae of female sternum VII, the terminal visible sternite (either side)

Genus *Sphallomorpha* Westwood

Westwood, 1837: 414. – For additional literature records and diagnosis see Baehr (1992).

Type species. *Sphallomorpha decipiens* Westwood, 1837, by monotypy.

Diagnosis. Wide, depressed species with prognathous head, elongate antenna, elongate legs, comparatively complete chaetotaxy, normal shaped, not foliaceous female gonocoxites, and barely physogastric larvae. As far as it is recorded, all species of this genus are oviparous. In males the terminal sternum is excised, and in both sexes it bears a varied number of elongate setae at the apical margin.

Note. As Baehr (1994a) demonstrated, *Sphallomorpha* is plesiomorphic in many character states as compared with the other pseudomorphine genera, and thus, it represents the adelphotaxon of all other genera of Pseudomorphinae.

The genus *Sphallomorpha* includes 157 species at present, of which only 8 occur outside of Australia in New Guinea (Baehr 1992, 1993a, b, 1994b, 2002, 2004, 2005, 2006, 2008, 2009a, b, 2010, 2014). Species of *Sphallomorpha* usually are wide and rather depressed, they are either unicolourous black or piceous, or bear various, sometimes very vivid, colour patterns on the elytra and/or the pronotum. In Australia they occur in a great variety of habitats, provided that some tree growth is present, but appear to be very rare in rain forest. The Australian species are known to live under the loose bark of tree trunks of various eucalypts or in deep bark crevices on rough-barked eucalypt and non-eucalypt trees. They are extremely agile, fast running beetles which fly deliberately, but are quite rarely encountered at light. The larvae of the very few species of which the larvae were recorded, apparently live with ants (Moore 1974), but are not decidedly physogastric as are the recorded larvae of the other pseudomorphine genera (Baehr 1997).

Baehr (1992) divided the genus into a number of putative monophyletic species groups which combine species that share certain synapomorphic character states of the external or genitalic morphology. According to certain character states of external and male and female genitalic morphology, as mentioned in the key of Baehr (1992), the species described below belongs to the *parva*-group of the revision.

Sphallomorpha cognata sp. nov.
(Figs 1, 4)

Material. HOLOTYPE: ♂, QLD: 25.829°SX151.071°E Inskip Point, 10m, 4 Feb2013 G.Monteith, barkspray, cypress/eucs, sandy 35470" (QMT234149).

Etymology. The name refers to the close similarity of body shape and structure of the aedeagus as

FIGS 1-3. Habitus. Body lengths in brackets. **1**. *Sphallomorpha cognata* sp. nov. (9.5 mm). **2**. *Adelotopus moffatti* sp. nov. (6.2 mm). **3**. *Adelotopus leviusculus* sp. nov. (5.35 mm).

compared with *S. politoides* Baehr, 1997 and the apparent close relationship with that species.

Diagnosis. A moderately large, fairly wide, moderately convex, unicolourous black species without mental tooth but with angulate gular sutures, and with faint elytral striation. It belongs to the *parva*-group of the revision and in view of body size, elytral striation, and structure of the aedeagus it is most similar, and probably nearest related, to *S. politoides* Baehr, 1997. Main differences from *S. politoides* are: barely raised elytral intervals, absence of the posterior marginal pronotal seta, lesser number of marginal setae on the elytra, and differently structured internal sac of the aedeagus.

Description. *Measurements*. Length: 9.5 mm; width: 5.2 mm. Ratios: Width pronotum/head: 1.72; width elytra/pronotum: 1.12; width/length of pronotum: 2.55; length/width of elytra; 1.21; length elytra/pronotum: 3.50.

Colour (Fig. 1). Black, lateral margins of pronotum and elytra barely paler, labrum and mandibles piceous, palpi, legs, and lower surface rufous, antenna yellow.

Chaetotaxy. Supraorb: 1; preorb: 1, clyp: 1; labr: 4; ment.med: 2; ment.lat: 3-4; gloss: 4; gul: 1; postorb: 3; suborb: 4-5; pron.ant: 1; pron.post: -; proeps: 1 + 4; marg: 13-14; st VI: 2; ♂ st VII: 8-10; ♀ st VII: ?.

Head (Fig. 1). Of average size, fairly depressed, without distinct frontal impressions. Eye large, laterad well projected. Clypeus slightly concave, clypeal suture barely indicated. Lateral border of head convex, incurved in front of the eye. Labrum wide, almost straight, with a faint median sinuosity. Mentum without tooth. Wings of mentum wide, convexly triangular, at apex rounded. Glossa in middle fairly excised, slightly excavate. Dorsal part barely surpassing the ventral one. Gular sutures angulate. Palpi sparsely pilose. Terminal palpomere of both

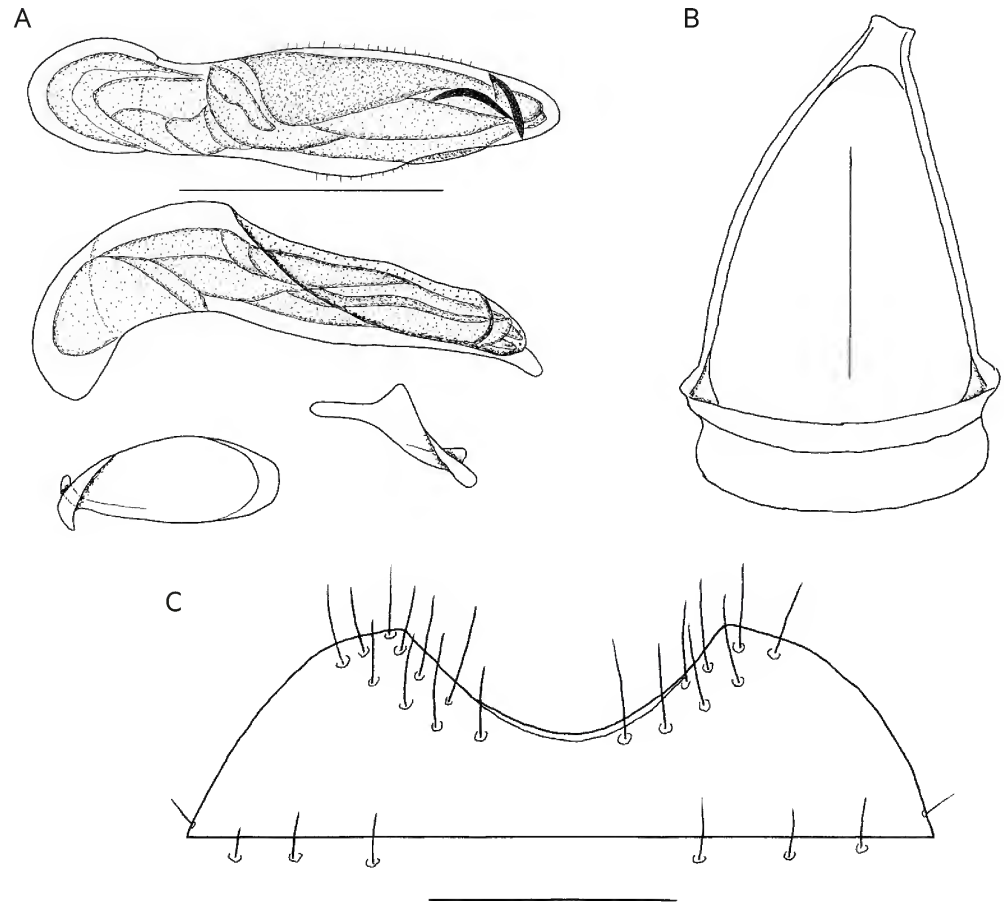

FIG 4A-C.*Sphallomorpha cognata* sp. nov. **A**, Male genitalia: aedeagus, left side, lower surface, parameres. Scale bar: 1 mm; **B**, Male genital ring. Scale bar: 1 mm; **C**, Male terminal sternum.Scale bar: 1 mm.

palpi narrow and elongate, with oblique apex, not securiform. Galea elongate, moderately large, with some very short hairs along anterior border and at apex. Antenna rather elongate, median antennomeres < 3 x as long as wide. Medially of eye with a few shallow longitudinal strioles, also in middle with short irregular strioles. Centre of frons with a shallow impression on either side. Microreticulation of dorsal surface dense and distinct, fine, isodiametric. Punctures rather sparse, fine, and difficult to detect within the microreticulation. Surface with sparse and fine, erect pilosity, which is only visible when viewed from side, surface fairly dull. Ventral surface with very sparse, short, erect pilosity.

Pronotum (Fig. 1). Rather wide, fairly convex, convexly quadrangular, lateral margins not explanate. Apex wide, with rather deep excision. Anterior angle projected, but rounded. Lateral margin evenly convex, widest immediately in front of the base. Basal angle shortly rounded. Base almost straight. Lateral margin with very fine border line. Apex only laterally very finely bordered, base not bordered. No discal impressions visible. Microreticulation dense and fairly distinct, isodiametric, punctures dense

and moderately coarse, clearly visible, surface with sparse, short, erect pilosity, rather dull.

Elytra (Fig. 1). Moderately elongate, little narrowed apicad, widest shortly behind base, dorsal surface moderately convex. Lateral margins almost evenly convex, not explanate. Apex slightly oblique and convex. Base without a scutellary seta and pore. Striae faint, at base reduced, increasingly so in the lateral striae, all striae impunctate. Intervals very faintly convex except near base. Series of marginal pores rather spaced in middle. Microreticulation dense and distinct, isodiametric, punctures dense and moderately coarse, clearly visible, surface with sparse, short, erect pilosity, rather dull.

Lower surface. Prosternal process elongate, narrow, apex almost straight, ventral surface convex, straight to apex, impilose. Metepisternum slightly > 2 x as long as wide at apex. Excision of terminal abdominal sternum in male wide and shallow, with 9-11 elongate setae on each side.

Legs. Elongate, slender. Metatarsus as long as metatibia. 1st tarsomere of metatarsus as long as 2nd and 3rd tarsomeres together. 1st - 3rd tarsomeres of male protarsus biseriately pilose.

Male genitalia (Fig. 4). Sternum VII wide and rather short, with wide, fairly deep, and slightly v-shaped excision. Genital ring wide, triangular, slightly symmetric, basal border feebly convex, lateral angles rounded, basal plate wide, short, barely excised, apex narrow, oblique. Aedeagus short and wide, straight, but slightly asymmetric, in middle gently convex, lower border in middle slightly convex, near apex slightly concave. Lateral margins in middle with a row of very short hairs. Apex short, wide, convexly triangular, rounded at tip, depressed, slightly directed down. Orificium elongate. Internal sac near apex with two sclerotized rods and with several large, more or less twisted folds. Both parameres elongate, the right paramere in the apical part narrow, straight, rounded at apex, the left paramere slightly ovoid, with obtusely convex apex.

Female gonocoxites. Unknown.

Variation. Unknown.

Distribution. South-eastern Queensland, Australia. Known only from type locality on the coast just north of the town of Rainbow Beach.

Collecting circumstances. Sampled by pyrethrum bark spray in mixed cypress and eucalypt forest on sandy soil. Certainly this is a bark inhabiting species like its congeners.

Genus *Adelotopus* Hope

Adelotopus Hope, 1834: 11 – Baehr 1997: 51.

Type species. *Adelotopus gyrinoides* Hope, 1834, by monotypy.

Diagnosis. Comparatively narrow, moderately depressed to convex species with almost orthognathous head, short antenna, wide, rather short legs, reduced chaetotaxy, foliaceous female gonocoxites, and moderately physogastric larvae. As far as it is recorded, all species of this genus are ovoviviparous. The terminal sternum is similarly shaped in both sexes.

Note. With 135 described species at present, *Adelotopus* is the second largest genus of Australian Pseudomorphini. Species of *Adelotopus* are more or less elongate, dorsally rather convex, mostly unicolourous black or reddish-brown, but some bear a red elytral apex or differently shaped, yellow or rufous discal spots. The head is short and more or less directed ventrad, so that the mouth parts are barely visible from above, and the pronotum and the elytra cover most of the usually rather short legs. The chaetotaxy is generally very much reduced, the terminal abdominal sternum does not exhibit striking sexual differences, and the male genitalia generally are rather similarly shaped and structured. The female gonocoxites are also very similar in most species. They are foliaceous and bear a few setae. Through the many reductions, distinction of species is difficult and, apart from examination of the genitalia, needs measurements and examination of the few remnants of chaetotaxy and of the surface structure, *i.e.* striation of the elytra, punctation, and microreticulation.

With respect to the reduced chaetotaxy and the unique foliaceous female gonocoxites this genus is apotypic within Pseudomorphini and

it shares the ovoviviparous reproduction with all other genera except *Sphallomorpha Westwood, 1837* and perhaps also *Cryptocephalomorpha Ritsema*, 1875, where it has not been detected due to very rare material, but yet may be present.

Most species of *Adelotopus* occur in Australia. A few species are recorded from New Guinea, Solomon Islands, the Moluccas, Java, and southernmost mainland Malaysia. In Australia species of *Adelotopus* occur everywhere, provided some tree growth is present, but apparently not in dense rain forest. Species of this genus are found under bark of shedding eucalypts and in bark crevices of various trees. The larvae are somewhat physogastric and apparently myrmecophilous, but very few larvae have been detected so far.

Baehr (1997) divided the genus into a number of putative monophyletic species groups which combine species that share certain synapomorphic character states of the external or genitalic morphology. According to these character states of external and male and female genitalic morphology the species described below belong to the *politus*-group of the revision.

Adelotopus moffatti sp. nov.
(Figs 2, 5, 6)

Material. HOLOTYPE: ♂, QLD: 24.924°SX148.065°E Mt. Moffatt NP, Mahogany Forest, 1200 m, 15-16 Jan 2013, G.Monteith barkspray, O/F 35452 (QMT234152). PARATYPES: 3♂♂, 1♀, same data (CBM, QM); 1♀, QLD: 25.020°SX147.929°E Mt. Moffatt, 2 km W of HQ, 16 Jan 2013, G.Monteith barkspray, O/F 35450 (QM); 2♂♂, Qld: 24.790°Sx147.846°E Carnarvon Stn, nr Blue Water Spring 14 Oct 2014, D.Tree. 879 m. Pyrethyum knockdown. Eucalypt. 37124 (CBM, QM).

Etymology. The name refers to the type locality, Mt. Moffatt National Park.

Diagnosis. Species of the *politus*-group of the revision by virtue of the basal margin of the elytra which almost attains the suture. Within the group it belongs to a subgroup of uniformly black species. Distinguished from the most similar species *A. politus* Castelnau, 1867, by wider prothorax and elytra and by 4-5, instead of 3, apical setae on gonocoxite 2.

Description. *Measurements.* Length: 6.1-6.6 mm; width: 2.7-2.8 mm. Ratios. Width/length of pronotum: 1.84-1.90; width base/apex of pronotum: 1.63-1.68; width pronotum/head: 1.65-1.75; length/width of elytra: 1.46-1.53 length elytra/pronotum: 2.64-2.75.

Colour (Fig. 2). Black, pronotum and elytra with the lateral margins narrowly dark rufous translucent. Palpi dark, antenna, femora, and tarsi rufous, tibiae black. Lower surface dark piceous to black.

Head (Fig. 2). Short and wide, moderately depressed. Anterior border gently convex, lateral angle obtusely rounded, laterally slightly projecting, lateral borders distinctly oblique. Clypeal suture very fine or almost absent, semicircular, in middle interrupted. Labrum narrow, mostly concealed by the clypeus, apex faintly concave, bisetose. Antennal groove laterally not bordered, latero-posteriorly with a weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex oblique. Mentum laterally on either side with a pit. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surfaces and along border. Terminal palpomere of maxillary palpus widened apicad, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna short, 8th - 9th antennomeres almost 2 × as wide as long. Dorsal surface with a shallow sulcus medially of the eye, impilose, with extremely fine though distinct, isodiametric microreticulation and minute punctures barely recognisable even at high magnification. Ventro-laterally of the eye with few short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 2). Wide, dorsally convex, base wide, markedly narrowed to apex. Apical angle well produced, at apex angulate, somewhat oblique, well surpassing the posterior margin of the eye. Apex moderately excised, slightly convex in excision, very faintly bordered. Lateral margin gently convex, in basal half

almost straight. Marginal sulcus narrow, slightly widened apicad. Basal angle obtusely angulate, but shortly rounded at the very tip. Base almost straight, not or very indistinctly bordered. Surface near base without transverse impression. Marginal setae absent. Microreticulation extremely fine, somewhat superficial, isodiametric to slightly transverse, punctation extremely fine, on disc barely recognisable, laterally slightly more distinct, surface impilose, moderately glossy.

Elytra (Fig. 2). Rather short and wide, dorsally convex, little narrowed to apex, sides in basal half straight. Apex wide, slightly oblique and faintly convex, apical angles shortly rounded. Humerus rounded, basal margin short, slightly oblique. Marginal channel narrow, but visible even near apex. Basal border very fine, almost complete, but not attaining suture. Lateral border asetose except for a series of 5-6 setae at humerus. Series of umbilical pores consisting of 6 regularly set pores behind humerus and a single pore in apical half. Setae short. Striae not recognisable. Scutellary pore and stria absent. Microreticulation extremely fine and superficial, isodiametric, visible only at very high magnification, punctation rather sparse and very fine, likewise only perceptible at very high magnification, surface impilose, glossy.

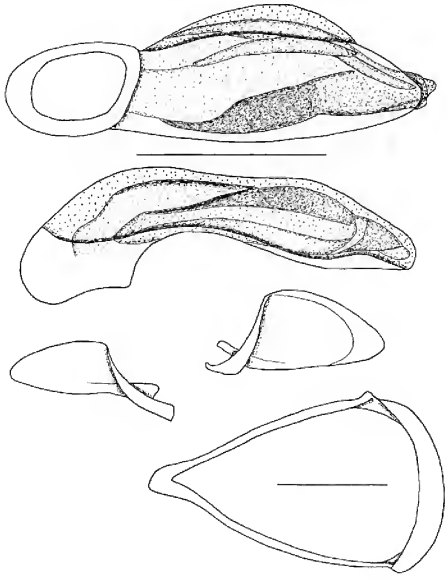

FIG. 5. *Adelotopus moffatti* sp. nov. Male genitalia: aedeagus, left side, lower surface, parameres, genital ring. Scale bars: 0.5 mm.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin depressed, slightly convex, shortly setose. Metepisternum moderately elongate, c. 1.5 × as long as wide, in posterior third obliquely bent and deeply hollowed. Abdominal sterna bisetose and with rather sparse but fairly elongate, slightly declined pilosity. Terminal sternum without longer setae along apical border.

Legs. Rather short, 1st tarsomere of protarsus about as wide as long, tibial groove of profemur deep, anterior plate widely overlapping the groove for the apical third, posterior border of groove sharp. Femur wide. Metatibia medium-sized, slightly > 4 x as long as wide, 1st tarsomere of metatarsus c. 1.5 x as long as wide. Three basal tarsomeres of male protarsus squamose beneath.

Male genitalia (Fig. 5). Genital ring wide, convexly triangular, almost symmetric, with narrow apex and wide, little excised base. Aedeagus short and wide, depressed, in middle markedly widened, asymmetric. Lower surface convex, not striped. Apex wide, triangularly convex, at tip rounded, symmetric. Orificium very elongate, internal sac with several folds, one of which is more distinctly sclerotized than the others, near apex with a distinct, oblique fold. Both parameres large, convexly triangular, with obtuse apex, left paramere considerably larger than the right one.

Female gonocoxites (Fig. 6). Gonocoxite rather narrow, apex wide, about transverse; with 3-4 elongate apical setae. Lateral plate fairly elongate, at the rounded medio-apical angle with 2-3 elongate setae.

Vivipary. Not recorded.

Variation. Little variation noted.

Distribution. Area of Carnarvon Range, central Queensland.

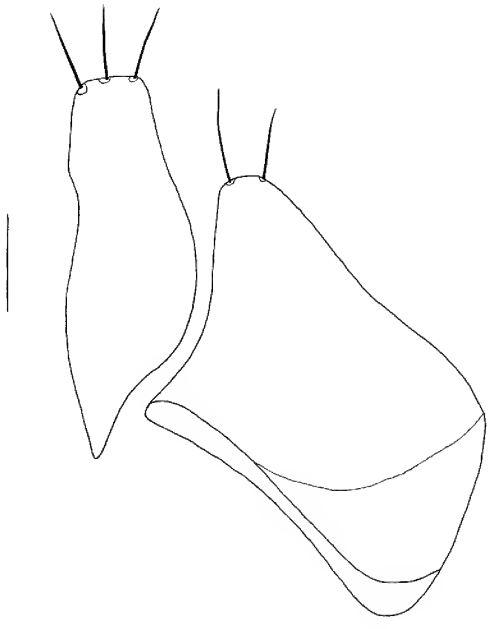

FIG 6. *Adelotopus moffatti* sp. nov. Female gonocoxites. Scale bars: 0.25 mm.

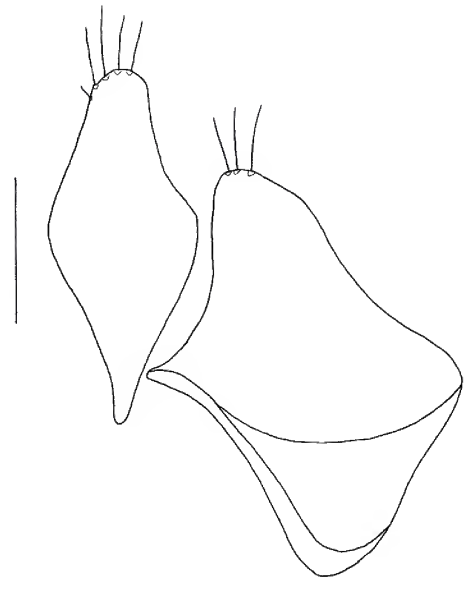

FIG. 7. *Adelotopus leviusculus* sp. nov. Female gonocoxites. Scale bars: 0.25 mm.

Collecting circumstances. All specimens were collected by pyrethrum spray in eucalypt forest.

Relationships. This species is very similar, and probably closely related, to *A. politus* Castelnau, 1867.

Adelotopus leviusculus sp. nov.
(Figs 3, 7)

Material. Holotype: ♀, Qld: 28°02.8'Sx153°07.2'E Glen Witheren, main scrub 3 Nov 2007 130 m G.B.Monteith. rainforest pyrethrum, trees. 15398" (QMT234151).

Etymology. The name refers to the comparatively glossy, very inconspicuously punctulate elytra.

Diagnosis. Species of the *politus*-group of the revision by virtue of the basal margin of the elytra which almost attains the suture. Within the group it belongs to a subgroup with a red apex of the elytra. Distinguished from the most similar species *A. semilunatus* Baehr, 1997, by even finer microreticulation and punctation, and by longer and laterally almost straight elytra.

Description. *Measurements.* Length: 5.35 mm; width: 1.45 mm. Ratios. Width/length of pronotum: 1.17; width base/apex of pronotum: 1.08; width pronotum/head: 1.22; length/width of elytra: 1.62; length elytra/pronotum: 2.68.

Colour (Fig. 3). Rather glossy black, but apical third of the elytra rufous, with the anterior margin of the red part semilunar; lateral margins of the elytra in basal half very narrowly dark reddish translucent. Palpi and antenna dark red, femora and tarsi red, tibiae black. Lower surface of head and thorax black, abdomen contrastingly red.

Head (Fig. 3). Short and wide, moderately depressed. Anterior border gently convex, lateral angle obtusely rounded, laterally slightly projecting, lateral borders distinctly oblique. Clypeal suture not perceptible. Labrum narrow, mostly concealed by the clypeus, apex straight, bisetose. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex slightly oblique. Glossa wide, tongue-like,

apically convex, ventrally with indistinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surfaces and along border. Terminal palpomere of maxillary palpus widened apicad, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna short, 8th - 9th antennomeres almost 2 × as wide as long. Surface with a shallow sulcus medially of the eye, impilose, with very fine though fairly distinct, isodiametric microreticulation and minute punctures barely recognisable even at high magnification. Ventro-laterally of the eye with few short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 3). Narrow, dorsally very convex, base narrow, little narrowed to apex. Apical angle moderately produced, at apex obtusely angulate, somewhat oblique, slightly surpassing the posterior margin of the eye. Apex moderately excised, slightly convex in excision, faintly bordered. Lateral margin very gently convex, in basal half almost straight. Marginal sulcus narrow, slightly widened apicad. Basal angle obtusely angulate, rather rounded at the very tip. Base almost straight, distinctly bordered. Surface near base without transverse impression. Microreticulation extremely fine and very superficial, barely perceptible, punctation very fine, barely recognisable on disc, laterally slightly more distinct, surface impilose, glossy.

Elytra (Fig. 3). Narrow and elongate, dorsally very convex, barely narrowed to apex, sides straight. Apex rather wide, oblique and slightly convex, apical angles rounded off. Humerus rounded, basal margin short, slightly oblique. Marginal channel narrow, but visible even near apex. Basal border almost complete, ending very close to suture. Lateral border asetose except for a few stiff setae at humerus. Series of umbilical pores consisting of 6 regularly set pores behind humerus and a single pore in apical half. Setae short. Striae not recognisable. Scutellary pore and stria absent. Microreticulation extremely fine and superficial, isodiametric, only remnants visible at very high magnification, punctation on disc very fine, rather dense, laterally more distinct and slightly coarser, surface impilose, very glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin depressed, slightly convex, feebly setose. Metepisternum rather elongate, > 2 x as long as wide. At least the preapical abdominal sternum with an ambulatory seta on either side. Sternum VI without longer setae along apical border. Lower surface with sparse, but rather elongate, erect to slightly declined pilosity.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical third, posterior border of groove sharp. Femur wide. Metatibia medium-sized, c. 4.5 x as long as wide, 1st tarsomere of metatarsus slightly > 1.5 x as long as wide. Squamosity of male protarsus unknown.

Male genitalia. Unknown.

Female gonocoxites (Fig. 7). Gonocoxite rather narrow, with wide, convex apex; with 4 elongate and one shorter apical setae. Lateral plate fairly elongate, at the rounded medio-apical angle with 3 elongate apical setae.

Vivipary. Not recorded.

Variation. Unknown.

Distribution. South-eastern Queensland. Known only from type locality which is just south of the town of Canungra.

Collecting circumstances. The holotype was collected by pyrethrum fogging of the bark of rain forest trees.

Relationships. The species is rather similar in appearance to *A. semilunatus* Baehr, 1997, but the relations to that species are uncertain, as long as the male genitalia of both species are not known.

KEYS

The species are introduced into the respective keys in the revisions (Baehr 1992, 1997). Figures in the revision are cited as Ba92 fig. and Ba97 fig.

Sphallomorpha cognata

In the key to the species of the genus *Sphallomorpha* (Baehr 1992) couplet 71 is reached which must be changed as following:

71. Large, wide species (> 9.0 mm). Aedeagus laterally of apex markedly sinuate (Fig. 4; Ba92 fig. 98k). 71a
– Smaller, less wide species (< 8.5 mm). Aedeagus either compact with wide, semicircular apex (Ba92 fig. 97k), or with rather acute apex which is laterally not markedly sinuate (Ba92 figs 99k, 100k). . . 72

71a Elytral intervals moderately but distinctly raised. Posterior marginal seta of pronotum present. Elytra with 19-20 marginal setae. Apex of aedeagus with two finely denticulate folds; lateral margins of aedeagus not pilose (Ba92 fig. 98k). Eastern QLD. . . . . .*politoides* Baehr, 1992
– Elytral intervals very little raised. Posterior marginal seta of pronotum absent. Elytra with 13-14 marginal setae. Apex of aedeagus with two not denticulate rods; lateral margins of aedeagus shortly pilose (Fig. 4). South-eastern QLD . . . . . *cognata* sp. nov.

Adelotopus moffatti

In the key to the species of the genus *Adelotopus* (Baehr 1997) couplet 72 is reached which must be changed as following:

72 Body narrower, generally with longer elytra, ratio l/w of elytra 1.39-1.53. Ratio width base/apex of pronotum < 1.70. When pronotum wide, then elytral striae at apex not distinctly rasp-like punctate (at 40x). . . 73.
– Body wider, generally with shorter elytra, ratio l/w of elytra < 1.38. Ratio width base/apex of pronotum > 1.76. When pronotum rather narrow, then elytral striae at apex distinctly rasp-like punctuate (at 40x) . . 74

73 Elytra generally slightly shorter, ratio l/w 1.38-1.48 and ratio l/w of pronotum < 1.85 and parameres convexly triamgular, with angulate apex (Ba97 figs 129i,k). e.SA, VIC, ACT. NSW, e.QLD; ?TAS . . . . . *politus* Castelnau, 1867
– Elytra generally slightly longer, ratio l/w 1.46-1.53; either ratio l/w of pronotum < 1.85 and parameres less triangular, with rather convex apex (Ba97 figs 132i,k) **or** ratio l/w of pronotum > 1.85 and parameres convexly triangular, with angulate apex (Fig. 5). ne.NSW, se. and c. QLD 73a

73a Pronotum less wide, ratio l/w < 1.85; parameres less triangular, with rather convex apex (Ba97 Figs 132i,k). ne.NSW, se.QLD . . . . . *doyeni* Baehr, 1997
– Pronotum wider, ratio l/w > 1.85; parameres convexly triangular, with angulate apex (Fig. 5). c.QLD. . . . . *moffatti* sp. nov.

74 As in Baehr 1997.

Adelotopus leviusculus

In the key to the species of the genus *Adelotopus* (Baehr 1997) couplet 40 is reached which must be changed as following:

40 Red apical part of the elytra anteriorly straight. Gonocoxite narrow, apical part parallel (Ba97 fig. 327). ne.QLD . . . . . *sparsepunctatus* Baehr, 1997
– Red apical part of the elytra anteriorly concave. Gonocoxite wider, apical part triangular or convex (Fig. 7; Ba97 figs 324, 325, 328). Distribution different . . . . . 41.

41 Elytra shorter, ratio l/w 1.55. Gonocoxite very wide, apex obliquely convex (Ba97 fig. 141l). Aedeagus unknown. Distribution unknown. . . . . *semilunatus* Baehr, 1997
– Elytra longer, ratio l/w > 1.60. Gonocoxite narrower, apex differently shaped (Fig. 7; (Ba97 figs 137l, 138l) . . . . . 41a.

41a Body size smaller, length 5.35 mm. Pronotum narrower, ratio w/l 1.17, little narrowed apicad (Fig. 3). se. QLD . . . . . .*leviusculus* sp. nov.
– Body size larger, length > 6.0 mm. Pronotum wider, ratio w/l > 1.55, markedly narrowed apicad . . . . . 42.

42 As in Baehr 1997.

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